means of a stud n^2, to the machine-arm A and receives oscillatory motion about the stud n^2 from an eccentric n^3 on the shaft B and eccentric-strap n^4. The vertical needle u is held in the vertical needle-bar u' and receives a reciprocating motion from the main shaft B by means of the eccentric-pin disk u^2 and connecting-rod u^3, and the thread-looper t, receiving an oscillatory as well as backward-and-forward motion, is hinged at t^2 to a rock-shaft t', journaled in a bracket t^3 of the machine-arm A. The rock-shaft t' is vibrated by an eccentric t^4, an arm t^5, secured to the rock-shaft t', and eccentric-strap t^6. The oscillatory motion of the thread-looper t' is obtained from the main shaft B by means of an eccentric t^7, a right-angular lever t^8, pivoted to the machine-arm A, and a connecting-rod t^9 between the thread-looper t' and one arm of the lever t^8, and an eccentric-strap t^{10} between the eccentric t^7 and the other arm of the lever t^8.

The cloth-plate c is suspended from the machine-arm A, and beneath the same is arranged a feed adapted to move the hat and sweat-band around a common support—*i. e.*, the band with the inner edge of the hat is fed in a circular path. To this end the feed f, Figs. 2 and 5, is attached to an oscillating bar f', which also receives an up-and-down movement. This bar f' is secured to the cloth-plate c by a universal joint f^3, comprising the collar f^4 around the stud f^2 and the pointed set-screws f^5, securing the bar f' to the collar f^4. Oscillating motion is imparted to the feed f by the eccentric f^7 on the main shaft B and lever f^8, pivoted at f^9 to the machine-arm A, the lower free extremity entering a recess in the bar f'. The up-and-down motion of the feed f is obtained from the main shaft B by an eccentric f^{10} and eccentric-strap f^{11}, connecting with the free end of the bar f'.

To properly support a hat onto which a sweat-band is to be sewed, a support S, comprising a dish-shaped disk s, attached to a stem s', is secured to the table supporting the machine, and a spring s^2 is employed to allow the disk s to be depressed in order to readily put a hat into position and remove the same when finished.

The operation of my machine is as follows: A single thread is led from a spool through the thread-guide g, tension device g', thread-guide g^2 on the needle-arm N, and through the eye of the needle n. A hat H is then placed on the support S by sliding the support a^3 toward the left and after putting the hat in proper position moving the said support a^3 toward the right and clamping it to the block a^5 by the screw a^4. The linen strip l, basted to the inner edge of the hat and having a wire, is then placed under the presser-foot p and also the sweat-band r, as shown in Figs. 1 and 7. The machine is then started, and the lower thread-carrying needle n, Figs. 8 to 10, presents on its upward movement the thread to the thread-looper t, which engages the thread at the rear of the needle n and puts it in position, so that the needle u on its down movement engages it with its notch and brings the same in the shape of a loop below the cloth-plate c. The needle n in its upward movement then enters between the rear of the needle u and thread-loop formed thereby and again rises above the cloth-plate c, when the thread-looper t again takes a loop from the needle n and presents it to the needle u, as clearly shown in Figs. 8 to 10.

The guard o is secured to the presser-foot p for the purpose of maintaining the needle n in its proper course of travel and to prevent bending of the needle n, and the guide o' is provided to place the sweat-band r in proper relative position with the basted linen strip.

It will be understood by those skilled in the art to which my invention pertains that modifications may be made without departing from the spirit of my invention. For instance, the machine may be used for sewing any kind of goods or articles by modifying some of its parts.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a sewing-machine of the kind described, a lower thread-carrying needle oscillating about a center above the cloth-plate of the machine, a reciprocating vertical needle having a thread-engaging notch, a thread-looper adapted to take a loop from the lower thread-carrying needle and present it to the notch of the vertical needle, and means for actuating the said needles and looper, substantially as and for the purpose set forth.

2. In a sewing-machine of the kind described, a lower thread-carrying needle oscillating about a center above the cloth-plate of the machine, a reciprocating vertical needle having a notch and moving in front of the lower needle, a thread-looper adapted to take a loop from the lower needle on its rear side and present the said loop above the cloth-plate to the said vertical needle so that its notch may engage the same and carry it through the material to be sewed and means for actuating the said needle and looper substantially as and for the purpose set forth.

3. The combination in an overedging single-thread sewing-machine of a thread-carrying needle normally located under the cloth-plate, a coacting thread-carrier located above the cloth-plate and the goods to be operated upon, a thread-taking fabric-penetrating needle adapted to receive a loop from the thread-carrier above the cloth-plate and push the said loop through the goods to be sewed and into the path of the said thread-carrying needle and means for actuating the said needles and thread-carrier, substantially as and for the purpose set forth.

4. In a sewing-machine of the character described, stitch-forming mechanism including the combination of companion needles on op-